

### **1.1.1 Incident Category**

Emergency Response; CERCLA incident category; Active Production Facility; Unified Command established.

### **1.1.2 Site Description**

The 218-acre facility produces butadiene and raffinate. Butadiene is used in the production of synthetic rubber used for tires and automobile hoses. Combined production capacity for this facility is more than 900 million pounds per year. Logistics infrastructure capabilities include pipeline, barge, rail and tank car. The Site contains multiple storage tanks and related processing equipment.

#### **1.1.2.1 Location**

The TPC Group (TPC) Port Neches Operations facility is located at 2102 TX-136 Spur, Port Neches, Jefferson County, TX 77561 (29.978056, -93.939167).

The facility borders the Neches River to the north, which flows to Sabine Lake to the east. Residential properties reside to the northwest, west, southwest, and northeast of the site. Population estimate for Port Neches is 12,831 (US Census, population estimates, July 1, 2018, (V2018)).

Combined production capacity for this facility is greater than 900 million pounds per year. Logistics infrastructure capabilities include pipeline, barge, rail and tank car. Treated waste water is discharged from the on-site joint waste water treatment plant (JWWTP) direct to the Neches River.

#### **1.1.2.2 Description of Threat**

On 27 November 2019, at approximately 01:00, an explosion was reported at the TPC Port Neches Operations site involving a processing unit. The facility reported the primary constituent was 1,3-butadiene.

### **1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results**

Due to the instability of the Site on the morning of November 27, 2019, which includes active fires, the possibility of additional explosions, and limited ability to conduct a detailed status assessment of the tanks, towers, and contents in each after the incident began, on-site preliminary assessment efforts by Unified Command were based on facility generator knowledge and remote monitoring.

## **2. Current Activities**

### **2.1 Operations Section**

Following the initial explosion, local responders from the Sabine Neches Chiefs Association (SNCA) responded along with TPC and multiple other first responder agencies to assess and secure the incident. TPC notified the National Response Center (NRC #1264990) at approximately 04:39.

Shortly after forming, Unified Command established the following air monitoring action levels for the incident. These action levels are all based upon a sustained reading of 5 minutes. If any representative under Unified Command recorded an exceedance above the action level then a strike team would be sent to location in order to confirm the reading.

- Volatile Organic Compounds (VOCs) at 5 parts per million (ppm)
- 1,3-butadiene at 0.5 ppm
- Particulate Matter (PM 2.5) at 138 ug/m3

Following further discussion among Unified Command, an additional action level was developed for 1,3-butadiene that could be utilized for the Jefferson County Judge to recommend for shelter-in-place, if the reading was sustained for 10 minutes.

- 1,3-butadiene at 1.5 ppm

### **2.1.1 Narrative**

The narrative actions have previously been discussed under the initial POLREP that covered the actions conducted since the incident began at on 27 November 2019 to 28 November 2019 (06:00), as well as POLREP #2 that covered the actions conducted from 28 November 2019 (06:00) to on 05 December 2019 (06:00).

### **2.1.2 Response Actions to Date (05 December 2019 06:00 – 13 December 2019 06:00)**

#### **05 December 2019 06:00 to 06 December 2019 06:00**

##### **Unified Command**

Unified Command carried out plans agreed upon in Incident Action Plan (IAP) – Period 7.

TPC prepared the Waste Management Plan and submitted it to Unified Command. The plan provided management practice waste during the South 4 Group Fire response activities. Roll-off containers generated from the incident were to be representatively sampled for waste characterization purposes prior to disposal. Materials collected including collected sorbents, vacuum trucks with liquid materials, vegetation, and trash/refuse. The TPC dock may serve as the staging area for full roll-off boxes and for frac tanks that accept transferred liquids from frac tanks staged along Highway 366 near Orchard Avenue.

##### **Fire Response**

As of 05 December 2019, the fire remained extinguished. Operations continued to utilize up to 6,000 - 8,000 GPM to the incident area every 2 hours for vapor suppression and cooling the tanks. At 10:00 on 05 December 2019, a valve on Tank 25 of Block 9 was sealed that had leaked vapors since the previous evening.

##### **Air Monitoring**

Handheld air monitoring was conducted from 05 December (06:00) to 06 December 2019 (06:00) at approximately 91 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total VOCs and for 1,3-butadiene.

EPA's Airborne Spectral Photometric Environmental Collection Technology (ASPECT) completed two flights on 05 December 2019, one in the morning (flight #16) and one in the afternoon (flight #17). Infrared (IR) imagery collected showed no elevated temperature sources other than local solar heating of metal surfaces. Five water cannons were visible in imagery in the morning flight but not in the afternoon flight. Analysis of IR imagery collected at the confluence of the waterway and the Neches River showed no sheen signature. Data collected on the morning flight did detect the presence of ethylene at a maximum of 0.522 ppm northwest of the facility. There were no chemical detections during the afternoon flight.

From 05 December 2019 (06:00) to 06 December 2019 (06:00), CTEH air monitoring teams collected approximately 1,634 air monitoring readings specifically for 1,3-butadiene in the community and 486 readings in the work area. CTEH air monitoring teams detected 1,3-butadiene at 43 locations in the community. The average detection and maximum concentration in the community was 0.753 ppm and 5.210 ppm, respectively. There were 18 detections that exceeded the UC action level for 1,3-butadiene in the community.

CTEH air monitoring teams detected 1,3-butadiene at 23 locations in the work area. The average detection and maximum concentration in the work area was 2.051ppm and 7.630 ppm, respectively. There were 9 detections that exceeded the Unified Command (UC) action level for 1,3-butadiene in the work area.

TCEQ teams also conducted air monitoring from 05 December 2019 (06:00) to 06 December 2019 (06:00).

### **Air Sampling**

CTEH continued to collect air samples in the surrounding community areas for laboratory analysis of airborne VOCs, PAHs, and asbestos, which had started between 27 November and 28 November 2019. On 05 December air samples were collected from approximately 30 locations surrounding the incident and the greater Port Neches and Groves area to be analyzed for a combination of either VOCs, PAHs, or asbestos.

Whole air samples for VOCs were collected using 1.4-liter evacuated canisters with a 24- hour flow controller. These samples were deployed for 24-hour periods and sent to a third-party accredited laboratory for analysis of VOCs, including 1,3-butadiene, in accordance with the EPA method TO-15.

In addition, air samples were collected over 24-hour periods using sampling air pumps with chemical-specific sorbent media and were analyzed for PAHs according to the National Institute of Occupational Safety and Health (NIOSH) Method 5506. Integrated air sampling was also conducted to document and quantify the any presence of airborne asbestos fibers.

All asbestos samples were sent to an American Industrial Hygiene Association (AIHA) - accredited laboratory for analysis by NIOSH method 7400 phase contrast microscopy (PCM) and NIOSH method 7402 transmission electron microscopy (TEM).

### **Water Sampling**

CTEH, on behalf of TPC, conducted surface water sampling on 05 December 2019 at multiple sample locations in canals downstream (southeast of the incident, in canals adjacent to the site, and in the Neches River.

The TPC samples were submitted for analysis for VOCs, semi-volatile organic compounds (SVOCs), oil and grease (O&G), glycols, total organic carbon (TOC), and total petroleum hydrocarbons (TPH). CTEH collected two samples from each location that were delivered to two independent laboratories, Pace Analytical and Earth Analytical Services. CTEH performed data validation and created summary tables once analysis had been completed. Surface water samples were also submitted for analysis for asbestos by method TEM EPA 100.2 to EMSL Analytical.

EPA conducted surface water sampling on 05 December 2019 at 6 sample locations in canals downstream (southeast) of the incident and in the Neches River.

The sample locations were:

- TPC-01
  - Outfall 201 Canal and Orchard Avenue Bridge
- TPC-02
  - Port Neches Road Bridge and Star Lake Canal
- TPC-04

- Confluence of the Star Lake Canal and the Neches River
- TPC-05
  - Port Neches Park, upstream background
- TPC-06
  - Outfall 201 Canal and the weir
- TPC-07
  - Huntsman Outfall 004

The EPA samples were submitted for analysis for per- and polyfluorakyl substances (PFAS) [specifically Perfluorohexanesulfonic acid, Perfluorooctane Sulfonate, and Perfluorooctanoic acid], volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), oil and grease (O&G), glycols, total organic carbon (TOC), and total petroleum hydrocarbons (TPH). The EPA samples were delivered to three laboratories: Eurofins-Test America (Houston, Texas), ALS (Houston, Texas), and ALS (Holland, Michigan). Samples analyzed under PFAS method 537 were delivered to ALS, Houston and samples analyzed under PFAS method 8327 were delivered to ALS, Holland.

### **Waste Recovery / SCAT**

SCAT monitored cleanup operations in Divisions A and B, as crews flush oil and oily debris and bagged vegetation. Shoreline oiling was also observed in Division E between the pumps and Atlantic Road.

### **Wildlife Response Actions**

Wildlife Response Services (WRS) and Texas Parks and Wildlife Department (TPWD) remained onsite to address any wildlife that may have been impacted in downstream spill pathway of the incident. Three unidentified fish were collected by the wildlife team in Division A.

### **Asbestos Community Assessment**

CTEH has continued the observational assessments and collection of facility related debris in the communities affected from the incident at the TPC facility. The assessments, debris collection, and sampling events were driven by concerns that debris with asbestos containing materials (ACM) was dislodged during the fire and transported off-site.

Following the field collection of potential facility-related debris, samples were sent to an AIHA - accredited laboratory for analysis. Bulk samples were analyzed for the asbestos content and fibers using the EPA 600/R-93/116 Method involving polarized light microscopy. In addition to bulk sample analysis, CTEH collected wipe samples to verify the presence/absence of asbestos fibers on both indoor and/or outdoor surfaces associated with residences that reported potential terminal debris on their property. Wipe samples were analyzed for the presence of asbestos fibers via ASTM Method 6480.

On 05 December 2019, CTEH collected 15 total bulk samples (9 located in Port Neches, TX, 4 located in Bridge City, TX, and 2 locations in Nederland, TX). Asbestos (chrysotile) was detected in 7 of the samples at 4 – 7 %.

### **06 December 2019 06:00 to 07 December 2019 06:00**

#### **Unified Command**

Unified Command carried out plans agreed upon in IAP – Period 8.

On 06 December 2019, TPC assessed the nuclear sources in the affected Block 5. TPC determined the sources remained secured and shielded. The three sources (6G7 – 2 mCi, N5D1 – 8,000 mCi, and N5F13 – 100 mCi) were used as densometers and levels in the facility.

### **Fire Response**

Unified Command identified 2 small fires in the impacted area on site on 06 December 2019. Operations has contained the residual fire and continued to monitor and assess for any fuel sources.

### **Air Monitoring**

Handheld air monitoring was conducted from 06 December (06:00) to 07 December 2019 (06:00), at approximately 104 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total volatile organic compounds (VOCs) and for 1,3-butadiene.

ASPECT completed one flight (flight #18) in the afternoon of 06 December 2019. IR imagery collected showed no elevated temperature sources in the TPC facility and no water cannons were in operation. Analysis of IR imagery collected at the confluence of the waterway and the Neches River showed no sheen signature. There were no chemical detections during the flight.

From 06 December 2019 (06:00) to 07 December 2019 (06:00), CTEH air monitoring teams collected approximately 2,029 air monitoring readings specifically for 1,3-butadiene in the community and 545 readings in the work area. CTEH air monitoring teams did not detect 1,3-butadiene in the community. CTEH air monitoring teams detected 1,3-butadiene at 47 locations in the work area. The average and maximum concentration in the work area was 0.898 and 3.59, respectively. There 23 detections that exceeded the UC action level for 1,3-butadiene in the work area.

TCEQ teams also conducted air monitoring from 06 December 2019 (06:00) to 07 December 2019 (06:00).

### **Air Sampling**

CTEH continued to collect air samples in the surrounding community areas for laboratory analysis of airborne VOCs, PAHs, and asbestos, which had started between 27 November and 28 November 2019. On 06 December air samples were collected from approximately 30 locations surrounding the incident and the greater Port Neches and Groves area to be analyzed for a combination of either VOCs, PAHs, or asbestos.

### **Water Sampling**

CTEH, on behalf of TPC, conducted surface water sampling on 06 December 2019 at multiple sample locations in canals downstream (southeast of the incident, in canals adjacent to the site, and in the Neches River.

The TPC samples were submitted for analysis for VOCs, SVOCs, oil and grease O&G, glycols, TOC, and TPH. CTEH collected two samples from each location that were delivered to two independent laboratories, Pace Analytical and Earth Analytical Services. CTEH performed data validation and created summary tables once analysis had been completed.

EPA conducted surface water sampling on 06 December 2019 at 6 sample locations downstream southeast) of the incident and in the Neches River.

The sample locations were:

- TPC-01
  - Outfall 201 Canal and Orchard Avenue Bridge
- TPC-02
  - Port Neches Road Bridge and Star Lake Canal
- TPC-04
  - Confluence of the Star Lake Canal and the Neches River
- TPC-05
  - Port Neches Park, upstream background
- TPC-06
  - Outfall 201 Canal and the weir
- TPC-07
  - Huntsman Outfall 004

The EPA samples were submitted for analysis for PFAS [specifically Perfluorohexanesulfonic acid, Perfluorooctane Sulfonate, and Perfluorooctanoic acid], VOCs, SVOCs, O&G, glycols, TOC, and TPH. The EPA samples were delivered to three laboratories: Eurofins-Test America (Houston, Texas), ALS (Houston, Texas), and ALS (Holland, Michigan). Samples analyzed under PFAS method 537 were delivered to ALS, Houston and samples analyzed under PFAS method 8327 were delivered to ALS, Holland.

### **Waste Recovery / SCAT**

Cleanup crews completed trimming of hanging vegetation and have completed multiple flushes of oily debris in Division A. Clean Harbors assessed bridge pilings of stains. There was no observed flow over the weir in-between Divisions B and C. Assessments determined no cleanup was necessary in Division C. Division E was inspected due to the presence of dark material along the shoreline, and operations returned to the area with a wash pump to conduct additional cleaning.

### **Wildlife Response Actions**

WRS and TPWD remained onsite to address any wildlife that may have been impacted in downstream spill pathway of the incident. Six unidentified fish were observed by not collected in Division A, C, and D. One call was received at the Wildlife Hotline Number on 06 December 2019. A deceased deer had been found by a responder in mouth of the tributary that drains into Molasses Bayou.

### **07 December 2019 06:00 to 08 December 2019 06:00**

#### **Unified Command**

Unified Command carried out plans agreed upon in IAP – Period 9.

CTEH, on behalf of TPC, prepared the Shoreline Cleanup Endpoint and Sign Off Process, which was signed off by Unified Command on 07 December 2019. The plan stated decision endpoint criteria intended to be utilized for the final signoff inspection once adequate cleanup has occurred to the shoreline and waterways affected by the incident in Divisions A, B, C, D and E. The plan has outlined a three phase approach to guide when the final assessment and signoff process would commence. Once Phase 3 has been achieved, a “maintenance program” may go into effect.

#### **Fire Response**

Two active fires burned on 07 December 2019.

#### **Air Monitoring**

Handheld air monitoring was conducted from 07 December (06:00) to 08 December 2019 (06:00) at approximately 180 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total volatile organic compounds (VOCs) and for 1,3-butadiene.

ASPECT completed one flight (flight #19) in the afternoon of 07 December 2019. IR imagery collected showed no elevated temperature sources in the TPC facility and no water cannons were in operation. Analysis of IR imagery collected at the confluence of the waterway and the Neches River showed no sheen signature. Isobutylene was detected 550 meters southwest of the facility at a concentration of 1.63 ppm.

From 07 December 2019 (06:00) to 08 December 2019 (06:00), CTEH air monitoring teams collected approximately 2,092 air monitoring readings specifically for 1,3-butadiene in the community and 601 readings in the work area. CTEH air monitoring teams detected 1,3-butadiene at 10 locations in the community. The average detection and maximum concentration in the community was 0.262 ppm and 0.390 ppm, respectively. There were no detections that exceeded the UC action level for 1,3-butadiene in the community.

CTEH air monitoring teams detected 1,3-butadiene at 37 locations in the work area. The average detection and maximum concentration in the work area was 0.256 ppm and 0.740 ppm, respectively. There were 6 detections that exceeded the UC action level for 1,3-butadiene in the work area.

TCEQ teams also conducted air monitoring from 07 December 2019 (06:00) to 08 December 2019 (06:00).

#### **Air Sampling**

CTEH continued to collect air samples in the surrounding community areas for laboratory analysis of airborne VOCs, PAHs, and asbestos, which had started between 27 November and 28 November 2019. On 07 December air samples were collected from approximately 30 locations surrounding the incident and the greater Port Neches and Groves area to be analyzed for a combination of either VOCs, PAHs, or asbestos.

#### **Water Sampling**

CTEH, on behalf of TPC, conducted surface water sampling on 07 December 2019 at multiple sample locations in canals downstream (southeast of the incident, in canals adjacent to the site, and in the Neches River.

The TPC samples were submitted for analysis for VOCs, SVOCs, O&G, glycols, TOC, and TPH. CTEH collected two samples from each location that were delivered to two independent laboratories, Pace Analytical and Earth Analytical Services. CTEH performed data validation and created summary tables once analysis had been completed.

EPA conducted surface water sampling on 07 December 2019 at 6 sample locations in locations canals downstream (southeast) of the incident and in the Neches River.

The sample locations were:

- TPC-01
  - Outfall 201 Canal and Orchard Avenue Bridge
- TPC-02
  - Port Neches Road Bridge and Star Lake Canal
- TPC-04

- Confluence of the Star Lake Canal and the Neches River
- TPC-05
  - Port Neches Park, upstream background
- TPC-06
  - Outfall 201 Canal and the weir
- TPC-07
  - Huntsman Outfall 004

The EPA samples were submitted for analysis for PFAS [specifically Perfluorohexanesulfonic acid, Perfluorooctane Sulfonate, and Perfluorooctanoic acid], VOCs, SVOCs, O&G, glycols, TOC, and TPH. The EPA samples were delivered to three laboratories: Eurofins-Test America (Houston, Texas), ALS (Houston, Texas), and ALS (Holland, Michigan). Samples analyzed under PFAS method 537 were delivered to ALS, Houston and samples analyzed under PFAS method 8327 were delivered to ALS, Holland.

### **Waste Recovery**

### **Wildlife Response Actions**

WRS and TPWD remained onsite to address any wildlife that may have been impacted in downstream spill pathway of the incident. The wildlife team investigated the call received the previous day regarding a deceased deer. TPWD determined the cause of death was not due to the incident. No calls were received at the Wildlife Hotline Number on 07 December 2019.

### **08 December 2019 06:00 to 09 December 2019 06:00**

#### **Unified Command**

Unified Command carried out plans agreed upon in IAP – Period 10.

The Port Neches-Groves ISD School Board of Trustees participated in a roundtable discussion with Unified Command from 14:00 – 15:00 on 08 December 2019. The purpose of the meeting was to discuss the status of operations at the incident and the collected air monitoring data to date. Following the discussion the Port Neches-Groves ISD determined that the schools would be reopened on Monday, 09 December 2019. Grigsby Avenue at Spur 136 was reopened on Sunday evening in advance of the students returning to school. Portions of roadways around TPC remain closed.

TPC reported to Unified Command, that a white rubbery substance, later determined to be latex, was observed in Block 6, and had discharged from the Lion Elastomers facility onto TPC. In response, TPC mobilized 3 vacuum trucks to skim the material. No material was discharged past Outfall 201. TPC separated the material and deposited it into frac tanks. The material totaled 30,000 gallons.

#### **Fire Response**

Two active fires burned on 08 December 2019.

#### **Air Monitoring**

Handheld air monitoring was conducted from 08 December (06:00) to 09 December 2019 (06:00), at approximately 113 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total volatile organic compounds (VOCs) and for 1,3-butadiene.



ASPECT did not conduct any flights on 08 December 2019 due to unfavorable weather conditions.

From 08 December 2019 (06:00) to 09 December 2019 (06:00), CTEH air monitoring teams collected approximately 2,197 air monitoring readings specifically for 1,3-butadiene in the community and 700 readings in the work area. CTEH air monitoring teams detected 1,3-butadiene at 27 locations in the community. The average detection and maximum concentration in the community was 0.190 ppm and 0.50 ppm, respectively. There were no detections that exceeded the UC action level for 1,3-butadiene in the community.

CTEH air monitoring teams detected 1,3-butadiene at 28 locations in the work area. The average detection and maximum concentration in the work area was 0.266 ppm and 0.910 ppm, respectively. There were 2 detections that exceeded the UC action level for 1,3-butadiene in the work area.

### **Air Sampling**

CTEH continued to collect air samples in the surrounding community areas for laboratory analysis of airborne VOCs, PAHs, and asbestos, which had started between 27 November and 28 November 2019. On 08 December air samples were collected from approximately 30 locations surrounding the incident and the greater Port Neches and Groves area to be analyzed for a combination of either VOCs, PAHs, or asbestos.

### **Water Sampling**

CTEH, on behalf of TPC, conducted surface water sampling on 08 December 2019 at multiple sample locations in canals downstream (southeast of the incident, in canals adjacent to the site, and in the Neches River.

The TPC samples were submitted for analysis for VOCs, SVOCs, O&G, glycols, TOC, and TPH. CTEH collected two samples from each location that were delivered to two independent laboratories, Pace Analytical and Earth Analytical Services. CTEH performed data validation and created summary tables once analysis had been completed.

EPA conducted surface water sampling on 08 December 2019 at 6 sample locations in locations canals downstream (southeast) of the incident and in the Neches River.

The sample locations were:

- TPC-01
  - Outfall 201 Canal and Orchard Avenue Bridge
- TPC-02
  - Port Neches Road Bridge and Star Lake Canal
- TPC-04
  - Confluence of the Star Lake Canal and the Neches River
- TPC-05
  - Port Neches Park, upstream background
- TPC-06
  - Outfall 201 Canal and the weir
- TPC-07
  - Huntsman Outfall 004

The EPA samples were submitted for analysis for PFAS [specifically Perfluorohexanesulfonic acid, Perfluorooctane Sulfonate, and Perfluorooctanoic acid], VOCs, SVOCs, O&G, glycols, TOC, and TPH. The EPA samples were delivered to three laboratories: Eurofins-Test America (Houston, Texas), ALS (Houston, Texas), and ALS (Holland, Michigan). Samples analyzed under PFAS

method 537 were delivered to ALS, Houston and samples analyzed under PFAS method 8327 were delivered to ALS, Holland.

### **Waste Recovery / SCAT**

Cleanup crews continued to flush shoreline of Division A (between Orchard Avenue and Pine Street) and Division E. A sample collected the previous day along the shoreline of Division E, confirmed the presence of hydrocarbons.

As of 08 December 2019 there are 3.63 miles of affected shoreline in active cleanup due to light oiling present:

- Division A: 1.51 miles
- Division B: 0.60 miles
- Division C: 0.47 miles
- Division E (pumps to wetland): 1.05 miles

### **Wildlife Response Actions**

WRS and TPWD remained onsite to address any wildlife that may have been impacted in downstream spill pathway of the incident. No calls were received at the Wildlife Hotline Number on 08 December 2019.

### **09 December 2019 06:00 to 10 December 2019 06:00**

#### **Unified Command**

Unified Command carried out plans agreed upon in Incident Action Plan (IAP) – Period 11.

Unified Command agreed to institute a 48-hour operational period beginning 10 December 2019 at 06:00. On the evening of 09 December 2019, EPA, ATSDR, and Texas Poison Center Network participated in a Port Neches-Groves ISD board meeting, and provided updates on the response as well as answers to questions or concerns.

On 09 December 2019 beginning at approximately 17:30, TPC introduced an additive known as DEHA (diethylhydroxylamine) to storage tanks containing 1,3-butadiene to stabilize the materials for longer-term storage, transportation, and removal from the site. The purpose of DEHA was to inhibit or prevent chemical reactions in storage tanks and it has been commonly used in industry operations and materials transport.

CTEH, on behalf of TPC, prepared the Boom Maintenance and Monitoring Plan, which was subsequently signed off by Unified Command.

#### **Fire Response**

Two active fires burned on 09 December 2019. TPC stated they had not determined the source that has provided one of the fires to burn with intensity.

#### **Air Monitoring**

Handheld air monitoring was conducted from 09 December (06:00) to 10 December 2019 (06:00) at approximately 123 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total volatile organic compounds (VOCs) and for 1,3-butadiene.

ASPECT did not conduct any flights 09 December 2019, due to unfavorable weather conditions. Following a joint decision within UC, the OSC demobilized ASPECT as of approximately 16:20 on 09 December 2019. ASPECT formally demobilized from site on 10 December 2019.

From 09 December 2019 (06:00) to 10 December 2019 (06:00), CTEH air monitoring teams collected approximately 2,117 air monitoring readings specifically for 1,3-butadiene in the community and 620 readings in the work area. CTEH air monitoring teams did not detect 1,3-butadiene in the community.

CTEH air monitoring teams detected 1,3-butadiene at 16 locations in the work area. The average detection and highest concentration in the work area was 0.174 ppm and 0.410 ppm, respectively.

### **Air Sampling**

CTEH continued to collect air samples in the surrounding community areas for laboratory analysis of airborne VOCs, PAHs, and asbestos, which had started between 27 November and 28 November 2019. On 09 December air samples were collected from approximately 30 locations surrounding the incident and the greater Port Neches and Groves area to be analyzed for a combination of either VOCs, PAHs, or asbestos.

### **Water Sampling**

CTEH, on behalf of TPC, conducted surface water sampling on 09 December 2019 at multiple sample locations in canals downstream (southeast of the incident, in canals adjacent to the site, and in the Neches River.

The TPC samples were submitted for analysis for VOCs, SVOCs, O&G, glycols, TOC, and TPH. CTEH collected two samples from each location that were delivered to two independent laboratories, Pace Analytical and Earth Analytical Services. CTEH performed data validation and created summary tables once analysis had been completed.

EPA conducted surface water sampling on 09 December 2019 at 6 sample locations in locations canals downstream (southeast) of the incident and in the Neches River.

The sample locations were:

- TPC-01
  - Outfall 201 Canal and Orchard Avenue Bridge
- TPC-02
  - Port Neches Road Bridge and Star Lake Canal
- TPC-04
  - Confluence of the Star Lake Canal and the Neches River
- TPC-05
  - Port Neches Park, upstream background
- TPC-06
  - Outfall 201 Canal and the weir
- TPC-07
  - Huntsman Outfall 004

The EPA samples were submitted for analysis for PFAS [specifically Perfluorohexanesulfonic acid, Perfluorooctane Sulfonate, and Perfluorooctanoic acid], VOCs, SVOCs, O&G, glycols, TOC, and TPH. The EPA samples were delivered to three laboratories: Eurofins-Test America (Houston, Texas), ALS (Houston, Texas), and ALS (Holland, Michigan). Samples analyzed under PFAS

method 537 were delivered to ALS, Houston and samples analyzed under PFAS method 8327 were delivered to ALS, Holland.

### **Waste Recovery / SCAT**

Clean Harbors conducted pressure washing at the outfall in Division A, as well as at concrete bridge pilings at Pine and Orchard Streets. Flushing operations in Division E were completed pending an inspection after the rain event.

### **Wildlife Response Actions**

No calls were received at the Wildlife Hotline Number on 09 December 2019. As of 16:00, the UC had not received a call to the wildlife-hotline number concerning affected wildlife in the last 72 hours. WRS demobilized from the site, but still operated the wildlife-hotline number remotely. TPWD remained in the UC represent any wildlife concerns.

### **Health Consultation**

On 09 December 2019, Agency for Toxic Substances and Disease Registry (ATSDR) representatives demobilized from the incident, but have remained available to remotely support Unified Command as needed.

As of 09 December 2019 the Texas Department of State Health Services (DSHS) provided an update of calls received by the Texas Poison Control Center Network (TPCN). Since the incident began, the TPCN has received 34 calls related to the incident at the TPC facility. See the in-set table below that has summarized the calls per day.

<b>Calls per Day</b>	<b>Exposure Call</b>	<b>Information Call</b>
11/27/19	0	2
11/28/19	3	0
11/29/19	2	0
11/30/19	2	0
12/02/19	1	0
12/04/19	10	1
12/05/19	7	0
12/06/19	1	0
12/07/19	1	0
12/08/19	4	0
<b>Total</b>	<b>31</b>	<b>3</b>

### **10 December 2019 06:00 to 11 December 2019 06:00**

#### **Unified Command**

Unified Command carried out plans agreed upon in IAP – Period 12. The JWWTP continued to receive water at 2400 GPM, and there was no storm water discharge over Outfall 201.

The DEHA injections that began the previous day, continued on 10 December 2019. Injections were performed and completed on Tanks 16, 15, and 14.

### **Fire Response**

Two active fires burned on 10 December 2019.

### **Air Monitoring**

Handheld air monitoring was conducted from 10 December (06:00) to 11 December 2019 (06:00) at approximately 113 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total VOCs and for 1,3-butadiene.

From 10 December 2019 (06:00) to 11 December 2019 (06:00), CTEH air monitoring teams collected approximately 2,065 air monitoring readings specifically for 1,3-butadiene in the community and 543 readings in the work area. CTEH air monitoring teams detected 1,3-butadiene at 21 locations in the community. The average detection and maximum concentration in the community was 0.148 ppm and 0.400 ppm, respectively. There were no detections that exceeded the UC action level for 1,3-butadiene in the community.

CTEH air monitoring teams detected 1,3-butadiene at 6 locations in the work area. The average detection and highest concentration in the work area was 0.125 ppm and 0.310 ppm, respectively.

### **Air Sampling**

CTEH continued to collect air samples in the surrounding community areas for laboratory analysis of airborne VOCs, PAHs, and asbestos, which had started between 27 November and 28 November 2019. On 10 December air samples were collected from approximately 30 locations surrounding the incident and the greater Port Neches and Groves area to be analyzed for a combination of either VOCs, PAHs, or asbestos.

### **Water Sampling**

CTEH, on behalf of TPC, conducted surface water sampling on 10 December 2019 at multiple sample locations in canals downstream (southeast of the incident, in canals adjacent to the site, and in the Neches River.

The TPC samples were submitted for analysis for VOCs, SVOCs, O&G, glycols, TOC, and TPH. Beginning on 10 December 2019, duplicate samples at each location would no longer be collected, and all samples would be delivered to Pace Analytical. CTEH performed data validation and created summary tables once analysis had been completed.

EPA conducted surface water sampling on 10 December 2019 at 6 sample locations in canals downstream (southeast) of the incident and in the Neches River.

The sample locations were:

- TPC-01
  - Outfall 201 Canal and Orchard Avenue Bridge
- TPC-02
  - Port Neches Road Bridge and Star Lake Canal
- TPC-04
  - Confluence of the Star Lake Canal and the Neches River

- TPC-05
  - Port Neches Park, upstream background
- TPC-06
  - Outfall 201 Canal and the weir
- TPC-07
  - Huntsman Outfall 004

The EPA samples were submitted for analysis for VOCs, SVOCs, O&G, glycols, TOC, and TPH. The EPA samples were delivered to the Eurofins-Test America (Houston, Texas) laboratory.

### **Waste Recovery / SCAT**

As of 10 December 2019 there are 1.05 miles of affected shoreline in active cleanup:

- Division E (pumps to wetland): 1.05 miles

SCAT recommended additional flushing along the banks in Division E.

As of 10 December 2019 there are 2.58 miles of shoreline SCAT recommends for no further treatment:

- Division A: 1.51 miles
- Division B: 0.60 miles
- Division C: 0.47 miles

### **11 December 2019 06:00 to 12 December 2019 06:00**

#### **Unified Command**

Unified Command continued to carry out plans agreed upon in IAP – Period 12. The JWWTP continued to receive water at 2800 GPM, and there was no storm water discharge over Outfall 201.

TPC Group continued to perform DEHA injections at the facility. Injections were performed on Tanks 109, 90, 100, 101, 91, 104, and 96 on 11 December 2019. TPC Group discovered that tank 33 had a low volume vapor leak.

#### **Fire Response**

Two active fires burned on 11 December 2019.

#### **Air Monitoring**

Handheld air monitoring was conducted from 11 December (06:00) to 12 December 2019 (06:00) at approximately 72 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total VOCs and for 1,3-butadiene.

From 11 December 2019 (06:00) to 12 December 2019 (06:00), CTEH air monitoring teams collected approximately 1,044 air monitoring readings specifically for 1,3-butadiene in the community and 536 readings in the work area. CTEH air monitoring teams detected 1,3-butadiene at 1 locations in the community. The single detection was 0.060 ppm.

CTEH air monitoring teams detected 1,3-butadiene at 12 locations in the work area. The average detection and highest concentration in the work area was 0.475 ppm and 1.280 ppm, respectively.

## **Air Sampling**

CTEH continued to collect air samples in the surrounding community areas for laboratory analysis of airborne VOCs, PAHs, and asbestos, which had started between 27 November and 28 November 2019. On 11 December air samples were collected from approximately 30 locations surrounding the incident and the greater Port Neches and Groves area to be analyzed for a combination of either VOCs, PAHs, or asbestos.

## **Water Sampling**

CTEH, on behalf of TPC, conducted surface water sampling on 11 December 2019 at multiple sample locations in canals downstream (southeast of the incident, in canals adjacent to the site, and in the Neches River.

The TPC samples were submitted for analysis for VOCs, SVOCs, O&G, glycols, TOC, and TPH. CTEH collected one sample from each location that were delivered to Pace Analytical. CTEH performed data validation and created summary tables once analysis had been completed.

EPA conducted surface water sampling on 11 December 2019 at 6 sample locations in canals downstream (southeast) of the incident and in the Neches River.

The sample locations were:

- TPC-01
  - Outfall 201 Canal and Orchard Avenue Bridge
- TPC-02
  - Port Neches Road Bridge and Star Lake Canal
- TPC-04
  - Confluence of the Star Lake Canal and the Neches River
- TPC-05
  - Port Neches Park, upstream background
- TPC-06
  - Outfall 201 Canal and the weir
- TPC-07
  - Huntsman Outfall 004

The EPA samples were submitted for analysis for VOCs, SVOCs, O&G, glycols, TOC, and TPH. The EPA samples were delivered to the Eurofins-Test America (Houston, Texas) laboratory.

## **Waste Recovery /SCAT**

SCAT performed inspections at Division A (Pine and Orchard Street), Division B (levee at pumps) and Division E (pumps to wetland outfall). Some sheening was observed at the western most end of Division A, near Outfall 201. No water flow was observed over the weir in Division B and C.

## **12 December 2019 06:00 to 13 December 2019 06:00**

### **Unified Command**

Unified Command carried out plans agreed upon in IAP – Period 13. The SCAT transition to Boom Maintenance and Monitoring Plan was signed off by Unified Command on 12 December 2019 (see below). The JWWTP continued to receive water at 2800 GPM, and there was no storm water discharge over Outfall 201.

TPC Group completed the final DEHA injection into Tank 85 (butadiene). The last of the 11 (Tanks 16, 14, 15, 109, 90, 100, 101, 91, 104, 96, 85) identified tanks, that required injections that began

on 09 December 2019. Personnel confirmed two tanks, tank 35 and 36 were leaking. TPC continued to assess tank 33, which continued to leak at low volume, and developed a plan to mitigate the leak.

### **Fire Response**

Two active fires burned on 12 December 2019.

### **Air Monitoring**

Handheld air monitoring was conducted from 12 December (06:00) to 13 December 2019 (06:00) at approximately 179 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total VOCs and for 1,3-butadiene.

From 12 December 2019 (06:00) to 13 December 2019 (06:00), CTEH air monitoring teams collected approximately 949 air monitoring readings specifically for 1,3-butadiene in the community and 643 readings in the work area. CTEH air monitoring teams detected 1,3-butadiene at 24 locations in the community. The average detection and maximum concentration in the community was 0.192 ppm and 1.190 ppm, respectively. There was 1 detection that exceeded the UC action level for 1,3-butadiene in the community.

CTEH air monitoring teams detected 1,3-butadiene at 30 locations in the work area. The average detection and highest concentration in the work area was 0.484 ppm and 2.880 ppm, respectively.

### **Air Sampling**

CTEH continued to collect air samples in the surrounding community areas for laboratory analysis of airborne VOCs, PAHs, and asbestos, which had started between 27 November and 28 November 2019. On 12 December air samples were collected from approximately 30 locations surrounding the incident and the greater Port Neches and Groves area to be analyzed for a combination of either VOCs, PAHs, or asbestos. As of 12 December 2019 362 samples have been collected for VOCs, 481 samples have been collected for PAHs, and 618 samples have been collected for asbestos.

### **Water Sampling**

CTEH, on behalf of TPC, conducted surface water sampling on 12 December 2019 at multiple sample locations in canals downstream (southeast of the incident, in canals adjacent to the site, and in the Neches River.

The TPC samples were submitted for analysis for VOCs, SVOCs, O&G, glycols, TOC, and TPH. CTEH collected one sample from each location that were delivered to Pace Analytical CTEH performed data validation and created summary tables once analysis had been completed.

EPA conducted surface water sampling on 12 December 2019 at 6 sample locations in canals downstream (southeast) of the incident and in the Neches River.

The sample locations were:

- TPC-01
  - Outfall 201 Canal and Orchard Avenue Bridge
- TPC-02
  - Port Neches Road Bridge and Star Lake Canal
- TPC-04
  - Confluence of the Star Lake Canal and the Neches River



- TPC-05
  - Port Neches Park, upstream background
- TPC-06
  - Outfall 201 Canal and the weir
- TPC-07
  - Huntsman Outfall 004

The EPA samples were submitted for analysis for VOCs, SVOCs, O&G, glycols, TOC, and TPH. The EPA samples were delivered to the Eurofins-Test America (Houston, Texas) laboratory.

### **Waste Recovery / SCAT**

As of 12 December 2019, TPC Group has reported waste totaling:

- Liquid in 16 Frac Tanks
  - 137,000 gallons of recovered liquids from the canals
  - 5,000 gallons of water and hydrocarbons from the south separator
  - 30,000 gallons of latex-laden wastewater from Lion Elastomers
- Solids in 7 roll off boxes
  - 162.5 cubic yards of hydrocarbon debris and sorbents from canal
- 37.5 cubic yards of potential asbestos containing material

SCAT Team performed spot inspections of Divisions A, B, C, D, and E. The team observed sheen present in Division A at out fall and Pine Street. SCAT recommended to Unified Command that all areas could be transitioned into maintenance mode, and following the recommendation Unified Command signed the plan for boom maintenance and monitoring as all Phase 3 parameters had been met. The parameters included:

- Outfall 201 no longer deemed a significant potential oil source
- Firewater was no longer sprayed
- Firewater not anticipated to be used again
- Adequate flushing has been completed in Division A, B, and E
- All oily debris has been removed in affected divisions
- Reduced number of boom in all divisions
- No significant accumulations of sheen or emulsified oil in booms over the last 48 hours

### **Community Debris Assessments**

As of 12 December 2019 2,724 curbside assessments in the community have been completed by CTEH on behalf of TPC Group in both Jefferson and Orange County.

In Jefferson County a total of 1,391 assessments have been completed. The results of the debris assessment were reported below:

- 536 properties with observed damage
- 187 properties with observed debris
- 56 items of industrial debris sampled for asbestos containing materials

In Orange County a total of 1,333 assessments have been completed. The results of the debris assessment were reported below:

- 39 properties with observed damage
- 11 properties with observed debris

- 16 items of industrial debris sampled for asbestos containing materials

Operational Period 06:00 to 06:00	CTEH Community Air Monitoring					
	Analyte	Total Readings	Detections	Average Detection (ppm)	Maximum Concentration (ppm)	Community Detections above Action Level
11/27 0:00 to 11/28	1,3-butadiene	442	11	0.160	0.210	0
11/28 to 11/29	1,3-butadiene	1041	2	0.210	0.270	0
11/29 to 11/30	1,3-butadiene	1205	25	0.221	1.00	1
11/30 to 12/01	1,3-butadiene	1540	12	0.300	1.00	3
12/01 to 12/02	1,3-butadiene	1733	4	0.095	0.110	0
12/02 to 12/03	1,3-butadiene	1488	16	0.149	0.450	0
12/03 to 12/04	1,3-butadiene	1492	60	0.253	1.350	3
12/04 to 12/05	1,3-butadiene	1568	351	1.292	12.090	211
12/05 to 12/06	1,3-butadiene	1634	43	0.753	5.210	18
12/06 to 12/07	1,3-butadiene	2029	0	0	0	0
12/07 to 12/08	1,3-butadiene	2092	10	0.262	0.390	0
12/08 to 12/09	1,3-butadiene	2197	27	0.190	0.500	0
12/09 to 12/10	1,3-butadiene	2117	0	0	0	0
12/10 to 12/11	1,3-butadiene	2065	21	0.148	0.400	0
12/11 to 12/12	1,3-butadiene	1044	1	0.060	0.060	0
12/12 to 12/13	1,3-butadiene	949	24	0.192	1.190	1

### **Future Planned Actions**

Following discussions with TCEQ and TPC regarding current Site conditions, the EPA FOSC transitioned oversight to TCEQ SOSC for long-term remediation and consequence management on December 13, 2019, since community air monitoring results have been below community action levels since December 6, 2019, and no new surface water impacts from the facility since the first week of the response. Under this transition, TPC Group will continue debris management, air monitoring, air sampling, surface water sampling, and asbestos sampling activities, and any reduction in environmental sampling or monitoring would require the approval of the TCEQ OSC and/or Remediation Division. TPC Group will continue to perform maintenance along the impacted 1.89 miles of canal downstream from the JWWTP Outfall 201.

TPC will notify the EPA FOSC when the three leaking tanks (Tank 33, 35, 36) have been secured and will provide a final report upon completion of the response effort. The EPA FOSC may reactivate Unified Command in the event any emergencies arise during the follow up work by TPC. The transition plan was signed by EPA, TCEQ, and TPC and transmitted to TPC on December 13, 2019 at 1000.

Since the beginning of the response on 27 November 2019 - 13 December 2019

CTEH air monitoring teams have recorded:

- Over 80,000 real-time air monitoring readings throughout the community.
- Approximately 26,000 air monitoring readings specifically for 1,3-butadiene in the community.
- Approximately 650 detections of 1,3-butadiene above the instrument detection limit.
- Approximately 240 detections of 1,3-butadiene exceeded the UC action of 0.5 ppm 1,3-butadiene.

**Acronyms (in order of appearance)**

TPC Group - TPC

Joint waste water treatment Plant - JWWTP

Sabine Neches Chiefs Association - SNCA

National Response Center - NRC

volatile organic compounds - VOCs

parts per million – ppm

particulate matter – PM

Incident Action Plan - IAP

Airborne Spectral Photometric Environmental Collection Technology – ASPECT

infrared – IR

Center for Toxicology and Environmental Health LLC – CTEH

Unified Command - UC

PAHs – polyaromatic hydrocarbons

American Industrial Hygiene Association – AIHA

National Institute of Occupational Safety and Health - NIOSH

phase contrast microscopy – PCM

transmission electron microscopy – TEM

semi-volatile organic compounds – SVOCs

oil and grease - O&G

total organic carbon – TOC

total petroleum hydrocarbons – TPH

per- and polyfluorakyl substances – PFAS

Wildlife Response Service – WRS

Texas Parks and Wildlife Department – TPWD

asbestos containing materials – ACM

mCi – millicurie

Independent School District – ISD

Department of State Health Services – DSHS

Texas Poison Control Center Network - TPCN

ATSDR – Agency for Toxic Substances and Disease Registry